

REMARKS

The application has been reviewed in light of the Office Action dated August 3, 2005. Claims 1-21 are pending, with claims 1 and 14 being in independent form. By this Amendment, the specification has been amended to correct informalities therein.

Claims 1-3, 13 and 14 were rejected under 35 U.S.C. §102(b) as purportedly anticipated by Pichl (DE 44 21 759 C1).

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1 and 14 are patentable over the cited art, for at least the following reasons.

This application relates to control of antenna directivity and to a variable-directivity antenna (for example, a directional antenna with a variable radiation pattern). Variable-directivity antenna can be utilized to facilitate adaptation of various information technology equipment with wireless technologies. Conventional variable-directivity antennas have the drawback that the size of the antenna is relatively large, making them difficult for assembly into compact size information technology equipment.

The claimed invention of the present application allows a variable-directivity antenna to have a compact size. In particular, directivity of the antenna is controlled by varying electric field distribution of a transmission line of the antenna in a boundary region between the transmission line and an antenna element connected to the transmission line, such that the electric field distribution turns to a desired direction.

For example, claim 1 is directed to a variable-directivity antenna comprising an omnidirectional antenna element, a transmission line connected to the antenna element, and an electric field adjusting structure provided in a boundary region between the antenna element and

the transmission line and configured to change electric field distribution of the transmission line to a desired direction. Claim 14 is directed to a method for controlling directivity of an antenna, which includes feeding a radio signal through a transmission line of the antenna, and varying electric field distribution of the transmission line in a boundary region between the transmission line and an antenna element connected to the transmission line, such that the electric field distribution turns to a desired direction.

Pichl, as currently understood by Applicant, is directed to a Doppler direction finder which includes three probes located in a uniformly distributed manner on a circular path in the electric field. Phase information for determining the azimuth is obtained through the signals from the three probes.

It should be noted that Pichl is not directed to a variable-directivity antenna, and the sensor of Pichl cannot change directivity. Further, the sensor of Pichl does not include electric field distribution adjusting means.

In addition, in the Pichl device, a coaxial cable is connected to a commutator ("Kommutator" in Fig. 3 of Pichl), and not to an antenna element, such as provided by the claimed invention of the present application. Further, although elements 4 and 8 (see Fig. 3) of Pichl appear to be an outer conductor and a center conductor, respectively, the coaxial cable is positioned inside the element 8 (see, for example, HF in Fig. 3 of Pichl).

Applicant simply does not find disclosure or suggestion in the cited art of a variable-directivity antenna (claim 1) or a method for controlling directivity of an antenna (claim 14), wherein directivity of the antenna is controlled by varying electric field distribution of a transmission line of the antenna in a boundary region between the transmission line and an antenna element connected to the transmission line, such that the electric field distribution turns

to a desired direction, as provided by the claimed invention of the present application.

Claims 4-12 and 15-21 were objected to as being dependent upon a rejected base claim, but according to the Office Action would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant appreciates the Examiner's statement in the Office Action of reasons for the indication of allowable subject matter, and submits that claims 4-12 and 15-21 recite subject matter which further supports patentability for reasons in addition to those identified in the Examiner's statement in the Office Action.

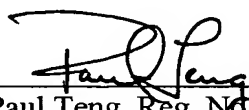
Further, since independent claims 1 and 14 are submitted to be patentable over the cited art, no changes to the form of claims 4-12 and 15-21 are believed to be necessary.

In view of the remarks hereinabove, Applicant maintains that the application is allowable, and earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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